<110> Emil Israel Katz

<120> PEPTIDES REPRESENTATIVE OF POLYPEPTIDES OF INTEREST AND ANTIBODIES DIRECTED THEREAGAINST, AND METHODS, SYSTEMS AND KITS FOR GENERATING AND UTILIZING EACH

<130> 01/22283

<160> 253

<170> PatentIn version 3.1

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Ser Thr Val Val Gln Leu Leu Glu Arg
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Phe Tyr Asp Pro Leu Ala Gly Lys
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Val Leu Leu Asp Gly Lys
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Leu Asn Val Gln Trp Leu Arg
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Ala His Leu Gly Ile Val Ser Gln Glu Pro Ile Leu Phe Asp Cys Ser
Ile Ala Glu Asn Ile Ala Tyr Gly Asp Asn Ser Arg
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<400> 130

Ala Ala Lys

<210> 131

<211> 14

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Glu Ala Asn Ile His Ala Phe Ile Glu Ser Leu Pro Asn Lys $1 \hspace{1cm} 5 \hspace{1cm} 10$

<210> 132

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Val Gly Asp Lys
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Ile Ala Ile Ala Arg
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Ile Ala Ile Ala Arg
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Glu Ser Glu Lys
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Glu Gly Arg
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Thr Cys Ile Val Ile Ala His Arg
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Glu His Gly Thr His Gln Gln Leu Leu Ala Gln Lys
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Gln
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Leu Lys
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Ser Gly Phe Leu Pro Cys Arg
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Pro Val Glu Lys
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Glu Ile Leu Ser Asn Ile Asn Gly Ile Met Lys
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       10
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                5
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Lys
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Pro Ala Asn Phe Lys
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Cys Asn Ser Gly Tyr Val Val Gln Asp Asp Val Val Met Gly Thr Leu
Thr Val Arg
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120
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Glu Asn Leu Gln Phe Ser Ala Ala Leu Arg
                5
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       10
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Leu Ala Thr Thr Met Thr Asn His Glu Lys
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Asn Glu Arg
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Ile Asn Arg
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Val Ile Glu Glu Leu Gly Leu Asp Lys
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Val Ala Asp Ser Lys
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      170
Val Gly Thr Gln Phe Ile Arg
                5
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Gly Val Ser Gly Gly Glu Arg
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Lys
<210> 173
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Arq
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Thr Ser Ile Gly Met Glu Leu Ile Thr Asp Pro Ser Ile Leu Ser Leu
Asp Glu Pro Thr Thr Gly Leu Asp Ser Ser Thr Ala Asn Ala Val Leu
Leu Leu Leu Lys
        35
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Arg
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Met Ser Lys
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Gln Gly Arg
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<400> 178
Thr Ile Ile Phe Ser Ile His Gln Pro Arg
<210> 179
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125
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Tyr Ser Ile Phe Lys
                5
<210> 180
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Leu Phe Asp Ser Leu Thr Leu Leu Ala Ser Gly Arg
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Leu Met Phe His Gly Pro Ala Gln Glu Ala Leu Gly Tyr Phe Glu Ser
Ala Gly Tyr His Cys Glu Ala Tyr Asn Asn Pro Ala Asp Phe Phe Leu
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25

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Asp Ile Ile Asn Gly Asp Ser Thr Ala Val Ala Leu Asn Arg
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Glu Glu Asp Phe Lys
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Ala Thr Glu Ile Ile Glu Pro Ser Lys
<210> 184
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      3
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 Gln Asp Lys
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 Pro Leu Ile Glu Lys
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Leu Ala Glu Ile Tyr Val Asn Ser Ser Phe Tyr Lys
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Glu Thr Lys
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Ala Glu Leu His Gln Leu Ser Gly Gly Glu Lys
                5
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<211>* 1
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Lys
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Lys
1
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<400> 192
Ile Thr Val Phe Lys
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<211> 13
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Glu Ile Ser Tyr Thr Thr Ser Phe Cys His Gln Leu Arg
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Trp Val Ser Lys
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Arg
1
<210> 196
<211> 3
<212> PRT
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<220>
<223> Computer generated synthetic peptide
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Ser Phe Lys
<210> 197
<211>
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Asn Leu Leu Gly Asn Pro Gln Ala Ser Ile Ala Gln Ile Ile Val Thr
Val Val Leu Gly Leu Val Ile Gly Ala Ile Tyr Phe Gly Leu Lys
<210> 198
<211> 9
<212> PRT
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<400> 198
Asn Asp Ser Thr Gly Ile Gln Asn Arg
<210> 199
<211> 26
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Ala Gly Val Leu Phe Phe Leu Thr Thr Asn Gln Cys Phe Ser Ser Val
Ser Ala Val Glu Leu Phe Val Val Glu Lys
            20
<210> 200
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<223>
<400> 200
Lys
<210> 201
<211>
       12
<212> PRT
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 <223> Computer generated synthetic peptide
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 Leu Phe Ile His Glu Tyr Ile Ser Gly Tyr Tyr Arg
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 <212> PRT
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<213> Artificial sequence
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<220>

<223> Computer generated synthetic peptide

<400> 202

<210> 203

<211> 9

<212> PRT

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<220>

<223> Computer generated synthetic peptide

<400> 203

Leu Leu Ser Asp Leu Leu Pro Met Arg 1

<210> 204

<211> 18

<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 204

Met Leu Pro Ser Ile Ile Phe Thr Cys Ile Val Tyr Phe Met Leu Gly 1 5 10 10 15

Leu Lys

<210> 205

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<211> 2
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<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 205

Pro Lys

<210> 206

<211> 73

<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 206

Ala Asp Ala Phe Phe Val Met Met Phe Thr Leu Met Met Val Ala Tyr $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$

Ser Ala Ser Ser Met Ala Leu Ala Ile Ala Ala Gly Gl
n Ser Val Val $20 \hspace{1.5cm} 25 \hspace{1.5cm} 30$

Ser Val Ala Thr Leu Leu Met Thr Ile Cys Phe Val Phe Met Met Ile 35 40 45

Phe Ser Gly Leu Leu Val Asn Leu Thr Thr Ile Ala Ser Trp Leu Ser 50 55 60

Trp Leu Gln Tyr Phe Ser Ile Pro Arg 65 70

<210> 207

<211> 41

<212> PRT

<220>

<223> Computer generated synthetic peptide

<400> 207

Tyr Gly Phe Thr Ala Leu Gln His Asn Glu Phe Leu Gly Gln Asn Phe $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$

Cys Pro Gly Leu Asn Ala Thr Gly Asn Asn Pro Cys Asn Tyr Ala Thr 20 25 30

Cys Thr Gly Glu Glu Tyr Leu Val Lys 35 40

<210> 208

<211> 12

<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 208

Gln Gly Ile Asp Leu Ser Pro Trp Gly Leu Trp Lys $1 \hspace{1cm} 5 \hspace{1cm} 10$

<210> 209

<211> 19

<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 209

Asn His Val Ala Leu Ala Cys Met Ile Val Ile Phe Leu Thr Ile Ala 1 5 10 15

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Tyr Leu Lys
<210> 210
<211> 5
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Leu Leu Phe Leu Lys
<210> 211
<211> 1
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<400> 211
Lys
<210> 212
<211> 2
<212> PRT
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<220>
<223> Computer generated synthetic peptide
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Tyr Ser
1
<210> 213
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<211> 47

<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 213

Leu Pro Leu Met Met Leu Val Phe Gly Glu Met Thr Asp Ile Phe Ala 20 25 30

Asn Ala Gly Asn Leu Glu Asp Leu Met Ser Asn Ile Thr Asn Arg 35 40 45

<210> 214

<211> 18

<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 214

Ser Asp Ile Asn Asp Thr Gly Phe Phe Met Asn Leu Glu Glu Asp Met 1 5 10 15

Thr Arg

<210> 215

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138
<211> 29
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Tyr Ala Tyr Tyr Tyr Ser Gly Ile Gly Ala Gly Val Leu Val Ala Ala
                5
Tyr Ile Gln Val Ser Phe Trp Cys Leu Ala Ala Gly Arg
<210> 216
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Ile Gly Met Phe Phe Gln Ser Met Ala Thr Phe Phe Thr Gly Phe Ile
Val Gly Phe Thr Arg
<210> 217
<211> 21
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<400> 217
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Leu Thr Leu Val Ile Leu Ala Ile Ser Pro Val Leu Gly Leu Ser Ala 1 5 10 15

Ala Val Trp Ala Lys 20

<210> 218

<211> 68

<212> PRT

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<220>

<223> Computer generated synthetic peptide

<400> 218

Ala Ile Thr Ala Asn Ile Ser Ile Gly Ala Ala Phe Leu Leu Ile Tyr $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$

Ala Ser Tyr Ala Leu Ala Phe Trp Tyr Gly Thr Thr Leu Val Leu Ser 20 25 30

Gly Glu Tyr Ser Ile Gly Gln Val Leu Thr Val Phe Phe Ser Val Leu 35 40 45

Ile Gly Ala Phe Ser Val Gly Gln Ala Ser Pro Ser Ile Glu Ala Phe 50 55 60

Ala Asn Ala Arg 65

<210> 219

<211> 17

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Leu Tyr Asp Pro 1
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Arg

<210> 220

<211> 25

<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 220

Ile Leu Leu Leu Asp Glu Ala Thr Ser Ala Leu Asp Thr Glu Ser Glu 1 5 10 15

Ala Val Val Gln Val Ala Leu Asp Lys 20 25

<210> 221

<211> 16

<212> PRT

<213> Artificial sequence

<220>

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<400> 221

Asn Ala Asp Val Ile Ala Gly Phe Asp Asp Gly Val Ile Val Glu Lys 1 $$ 5 $$ 10 $$ 15

<210> 222

<211> 21

<212> PRT

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<213> Artificial sequence
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<220>

<223> Computer generated synthetic peptide

<400> 222

Leu Val Thr Met Gln Thr Ala Gly Asn Glu Val Glu Leu Glu Asn Ala 1 5 10 15

Ala Asp Glu Ser Lys 20

<210> 223

<211> 14

<212> PRT

<213> Artificial sequence

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<223> Computer generated synthetic peptide

<400> 223

<210> 224

<211> 14

<212> PRT

<213> Artificial sequence

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<223> Computer generated synthetic peptide

<400> 224

Glu Ala Leu Asp Glu Ser Ile Pro Pro Val Ser Phe Trp Arg

1 10

<210> 225

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<211> 32
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<220>

<223> Computer generated synthetic peptide

<400> 225

Ile Ile Asn Gly Gly Leu Gln Pro Ala Phe Ala Ile Ile Phe Ser Lys 20 . 25 . 30

<210> 226

<211> 28

<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 226

Gln Asn Ser Asn Leu Phe Ser Leu Leu Phe Leu Ala Leu Gly Ile Ile 1 5 10 15

Ser Phe Ile Thr Phe Phe Leu Gln Gly Phe Thr Lys 20 25

<210> 227

<211> 45

<212> PRT

<213> Artificial sequence

<220>

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<400> 227
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Ile Ser Phe Ile Tyr Gly Trp Gln Leu Thr Leu Leu Leu Leu Ala Ile 20 25 30

Val Pro Ile Ile Ala Ile Ala Gly Val Val Glu Met Lys 35 40 45

<210> 228

<211> 14

<212> PRT

<213> Artificial sequence

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<223> Computer generated synthetic peptide

<400> 228

Phe Glu His Met Tyr Ala Gln Ser Leu Gln Val Pro Tyr Arg 1 5 10

<210> 229

<211> 24

<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 229

Phe Ser Tyr Ala Gly Cys Phe Arg

<210> 230

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<211> 32
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<212> PRT

<213> Artificial sequence

<220>

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<400> 230

Gly Ala Met Ala Val Gly Gln Ser Ser Phe Ala Pro Asp Tyr Ala Lys $20 \\ \hspace{1.5cm} 25 \\ \hspace{1.5cm} 30$

<210> 231

<211> 33

<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 231

Thr Pro Leu Ile Asp Ser Tyr Ser Thr Glu Gly Leu Met Pro Asn Thr 1 $$ 5 $$ 10 $$ 15

Leu Glu Gly Asn Val Thr Phe Gly Glu Val Val Phe Asn Tyr Pro Thr 20 25 30

Arg

<210> 232

<211> 14

<212> PRT

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Glu Ala Asn Ile His Ala Phe Ile Glu Ser Leu Pro Asn Lys
                5
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<211> 14
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Gly Ile Tyr Phe Ser Met Val Ser Val Gln Ala Gly Thr Lys
<210> 234
<211> 29
<212> PRT
<213> Artificial sequence
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<400> 234
Met Ser Ser Ser Asn Val Glu Val Phe Ile Pro Val Ser Gln Gly Asn
Thr Asn Gly Phe Pro Ala Thr Val Ser Asn Asp Leu Lys
<210> 235
<211> 16
<212> PRT
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<213> Artificial sequence
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<220>

<223> Computer generated synthetic peptide

<400> 235

Ala Phe Thr Glu Gly Ala Val Leu Ser Phe His Asn Ile Cys Tyr Arg 1 5 10 15

<210> 236

<211> 25

<212> PRT

<213> Artificial sequence

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<400> 236

Glu Ile Leu Ser Asn Ile Asn Gly Ile Met Lys Pro Gly Leu Asn Ala 1 5 10 15

Ile Leu Gly Pro Thr Gly Gly Gly Lys
20 25

<210> 237

<211> 21

<212> PRT

<213> Artificial sequence

<220>

<223> Computer generated synthetic peptide

<400> 237

Asp Pro Ser Gly Leu Ser Gly Asp Val Leu Ile Asn Gly Ala Pro Arg $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$

Pro Ala Asn Phe Lys

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Thr Val Arg
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Leu Ala Thr Thr Met Thr Asn His Glu Lys 1 5 10

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Thr Ser Ile Gly Met Glu Leu Ile Thr Asp Pro Ser Ile Leu Ser Leu 1 5 10 15

Asp Glu Pro Thr Thr Gly Leu Asp Ser Ser Thr Ala Asn Ala Val Leu 20 25 30

Leu Leu Lys 35

<210> 242

<211> 10

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Thr Ile Ile Phe Ser Ile His Gln Pro Arg 1 5 10

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<400> 243

Leu Phe Asp Ser Leu Thr Leu Leu Ala Ser Gly Arg 1 5 10

<210> 244

<211> 46

<212> PRT

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<400> 244

Leu Met Phe His Gly Pro Ala Gln Glu Ala Leu Gly Tyr Phe Glu Ser 1 5 10 15

Ala Gly Tyr His Cys Glu Ala Tyr Asn Asn Pro Ala Asp Phe Phe Leu 20 25 30

Asp Ile Ile Asn Gly Asp Ser Thr Ala Val Ala Leu Asn Arg
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<210> 245

<211> 12

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Leu Ala Glu Ile Tyr Val Asn Ser Ser Phe Tyr Lys 1 5

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<211> 13
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Glu Ile Ser Tyr Thr Thr Ser Phe Cys His Gln Leu Arg
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<211> 31
<212> PRT
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Asn Leu Leu Gly Asn Pro Gln Ala Ser Ile Ala Gln Ile Ile Val Thr
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Val Val Leu Gly Leu Val Ile Gly Ala Ile Tyr Phe Gly Leu Lys
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Ala Gly Val Leu Phe Phe Leu Thr Thr Asn Gln Cys Phe Ser Ser Val $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$

Ser Ala Val Glu Leu Phe Val Val Glu Lys 20 25

<210> 249

<211> 12

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<400> 249

Leu Phe Ile His Glu Tyr Ile Ser Gly Tyr Tyr Arg 1 5 10

<210> 250

<211> 72

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<400> 250

Ala Asp Ala Phe Phe Val Met Met Phe Thr Leu Met Met Val Ala Tyr 1 5 10 15

Ser Ala Ser Ser Met Ala Leu Ala Ile Ala Ala Gly Gln Ser Val Ser 20 25 30

Val Ala Thr Leu Leu Met Thr Ile Cys Phe Val Phe Met Met Ile Phe 35 40 45

Ser Gly Leu Leu Val Asn Leu Thr Thr Ile Ala Ser Trp Leu Ser Trp 50 55 60

Leu Gln Tyr Phe Ser Ile Pro Arg <210> 251 <211> 41 <212> PRT <213> Artificial sequence <220> <223> Computer generated synthetic peptide <400> 251 Tyr Gly Phe Thr Ala Leu Gln His Asn Glu Phe Leu Gly Gln Asn Phe Cys Pro Gly Leu Asn Ala Thr Gly Asn Asn Pro Cys Asn Tyr Ala Thr Cys Thr Gly Glu Glu Tyr Leu Val Lys <210> 252 <211> 12 <212> PRT <213> Artificial sequence <220> <223> Computer generated synthetic peptide <400> 252 Gln Gly Ile Asp Leu Ser Pro Trp Gly Leu Trp Lys <210> 253

<211> 19 <212> PRT

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Asn His Val Ala Leu Ala Cys Met Ile Val Ile Phe Leu Thr Ile Ala 1 5 10 15

Tyr Leu Lys